

IN THE CLAIMS

Please amend claims 1, 15 and 22 as follow:

1 1. (Currently Amended) An apparatus for ~~correcting a~~ to correct positional
2 scanning ~~error errors~~ in a flatbed scanner, the apparatus comprising:
3 a white shading plate having a black patch;
4 a reading module accommodating reading of positional information of said white
5 shading plate and said black patch; and
6 a controller comparing positional information of said black patch read by said
7 reading module with a predetermined reference value to correct the positional scanning
8 ~~error errors~~ in the flatbed scanner.

1 2. (Previously Presented) The apparatus of claim 1, wherein the information of
2 said black patch comprises at least one of information of the edge lines of said black
3 patch read through said reading module and information of a plurality of intervals of said
4 black patch, and the predetermined reference value includes a plurality of values.

1 3. (Previously Presented) The apparatus of claim 1, further comprised of said
2 controller correcting a scan start line using the result of comparing a predetermined
3 reference value with a number of pixels corresponding to an interval by which said
4 reading module is moved from a top edge line of said black patch read through said

5 reading module to a predetermined point.

1 4. (Previously Presented) The apparatus of claim 3, further comprised of the
2 predetermined reference value being a number of pixels corresponding to a distance from
3 the top edge line of said black patch to the scan start line.

1 5. (Original) The apparatus of claim 1, further comprised of said controller setting
2 a scan region based on the detection of a rightmost edge line of said black patch through
3 said reading module and a position of a first pixel being read obtained during reading of
4 said white shading plate to correct a scanning error for the position of the first pixel being
5 read.

1 6. (Original) The apparatus of claim 5, further comprised of said controller setting
2 a scan region accommodating when the read position of the first pixel read through said
3 reading module is beyond a point set by a predetermined reference value, the point set by
4 the predetermined reference value being the point where the first pixel is read, and

5 said controller setting a scan region accommodating when the read position of the
6 first pixel is within the point set by the predetermined reference value, the first pixel can
7 be read at the position where the first pixel is read.

1 7. (Original) The apparatus of claim 1, further comprised of said controller setting

2 a scan region based on the detection of the top edge line and a bottom edge line of said
3 black patch read through said reading module and an interval by which the reading
4 module is moved from the top edge line to the bottom edge line.

1 8. (Original) The apparatus of claim 7, further comprised of said controller setting
2 the scan region accommodating a skew of said reading module being corrected by
3 comparing the interval by which said reading module is moved with a predetermined
4 reference value.

1 9. (Original) The apparatus of claim 1, further comprised of said controller
2 adjusting a scan rate based on predetermined right and left intervals with respect to the
3 center of said black patch read through said reading module.

1 10. (Original) The apparatus of claim 9, further comprised of said controller
2 detecting the size of a region scanned by said reading module over the entire scan region
3 based on a difference detected by comparing the predetermined right and left intervals
4 with a predetermined reference value to adjust the scan rate.

1 11. (Original) The apparatus of claim 1, with the predetermined reference value
2 being set based on a pattern of said black patch.

1 12. (Original) The apparatus of claim 1, further comprising a memory for storing
2 the predetermined reference value.

1 13. (Original) The apparatus of claim 1, further comprising a transparent glass on
2 which a document is placed; and
3 a buffer storing an image read through said reading module,
4 with the controller controlling the output of the image stored in the buffer to
5 correct the scanning error.

1 14. (Original) The apparatus of claim 1, further comprised of said black patch
2 including a center dividing said black patch into two equal patterns, said black patch
3 being symmetric about the center line.

1 15. (Currently Amended) A method ~~for correcting a~~ of correcting positional
2 scanning ~~error~~ errors in a flatbed scanner with a white shading plate including a black
3 patch, the method comprising:

4 detecting positional information related to said black patch and an interval moved
5 by a reading module, based on positional information obtained by reading said black
6 patch using said reading module; and

7 correcting the positional scanning ~~error~~ errors according to the result of comparing
8 the detected positional information related to said black patch with a predetermined

9 reference value.

1 16. (Previously Presented) The method of claim 15, wherein the detected
2 information related to said black patch comprises at least one of information of edge lines
3 of said black patch and information of intervals, and the predetermined reference value
4 includes a plurality of values.

1 17. (Original) The method of claim 15, further comprised of when an interval
2 moved by said reading module on said black patch in a vertical direction after detecting a
3 top edge line of said black patch is detected, the scanning error is corrected based on a
4 difference detected by comparing the interval with the predetermined reference value.

1 18. (Original) The method of claim 17, further comprising a scanning start line
2 being corrected based on the detected difference.

1 19. (Original) The method of claim 15, further comprised of when a position at
2 which a first pixel is read is detected while reading said white shading plate after
3 detecting a rightmost edge line of said black patch, the scanning error is corrected by
4 setting a scan region according to the result of comparing the position at which the first
5 pixel is read with a predetermined reference value during the correction of the scanning
6 error.

1 20. (Original) The method of claim 15, further comprised of when an interval by
2 which the reading module is moved from a top edge line of said black patch to a bottom
3 edge line of said black patch is detected, a scan region is set based on the result of
4 comparing the interval by which the reading module is moved with the predetermined
5 reference value.

1 21. (Original) The method of claim 15, further comprised of when predetermined
2 right and left intervals with respect to the center of said black patch are detected, a scan
3 rate is adjusted based on the result of comparing each of the detected predetermined
4 intervals with a corresponding predetermined value.

1 22. (Currently Amended) A method, comprising:
2 detecting positional information with respect to the pattern of a black patch on a
3 white shading plate included in a scanning apparatus; and
4 comparing the detected positional information ~~detected~~ of the pattern of said black
5 patch with a respective predetermined reference value to correct positional scanning
6 errors, the respective reference value being set according to the pattern of said black
7 patch.

1 23. (Original) The method of claim 22, with the detecting information of said

2 black patch further comprising of detecting of edge lines of said black patch.

1 24. (Original) The method of claim 22, with the detecting information of said
2 black patch further comprising of checking the presence of black and white pixels while
3 moving a reading module of said scanning apparatus.

1 25. (Original) The method of claim 22, with the detecting information of said
2 black patch further comprising of checking whether an interval of said white shading
3 plate between a first edge of said black patch and a second edge of said black patch is
4 detected to have white pixels.

1 26. (Original) The method of claim 25, with the information further comprising of
2 extracting the number of pixels corresponding to an interval said reading module is
3 moved vertically on said black patch.

1 27. (Original) The method of claim 26, with the step of comparing the information
2 detected of said black patch with a respective predetermined reference value to correct
3 scanning errors, further comprising of comparing the number of pixels corresponding to
4 the interval said reading module is moved vertically on said black patch with the
5 respective predetermined reference value being the number of pixels a reader moves
6 vertically from a top edge of said black patch to the top edge of a transparent glass of the

7 said scanner.

1 28. (Original) The method of claim 23, further comprising:
2 detecting a first pixel being read while reading of said white shading plate; and
3 detecting a pixel difference between where the first pixel is read and the point
4 where the edge line has been detected.

1 29. (Original) The method of claim 28, further comprising:
2 comparing the difference between where the first pixel is read and the point where
3 the edge line has been detected to the respective predetermined reference value;
4 setting a scan region according to the distance between the edge line and the
5 respective predetermined reference value when the pixel difference is greater than the
6 respective predetermined reference value; and
7 setting the scan region from the point where the first pixel is read when the
8 respective predetermined reference value is greater than the pixel difference.

1 30. (Original) The method of claim 29, with the respective predetermined
2 reference value of the information of the first pixel read and the point where the edge line
3 has been detected being a distance from the rightmost edge of said black patch and
4 rightmost edge of said transparent glass.

1 31. (Original) The method of claim 23, with the step of detecting information of
2 said black patch further comprising of checking the number of pixels corresponding to an
3 interval the reading module is moved in the vertical direction from the edge line when all
4 edge lines are white pixels.

1 32. (Original) The method of claim 31, with the step of comparing the information
2 further comprising:

3 comparing of the number of pixels checked with the respective predetermined
4 reference value; and

5 setting a scan region to correct skew error according to the comparing of the
6 number of pixels checked with the predetermined reference value.

1 33. (Original) The method of claim 32, with the respective predetermined
2 reference value for correcting the skew error being a certain distance of a region of the
3 pattern of said black patch.

1 34. (Original) The method of claim 22, further comprising adjusting a scan rate
2 according to the comparison of the information detected of said black patch with the
3 respective predetermined reference value.